complications encountered with current endovascular techniques. The results obtained seem promising. A larger study is ongoing.

TCT-515

THE MULTILAYER FLOW MODULATOR STENT FOR THE TREATMENT OF THORACIC ABDOMINAL AND ABDOMINAL AORTIC ANEURYSMS. MOROCCAN EXPERIENCE

Michel C. Henry1, Amira Benjelloun2, Isabelle P. Henry3
1Cabinet de cardiologie, nancy, France, 2Clinique Coeur et Vaisseaux, Rabat, Morocco, 3Polyclinique Bois Bernard, Bois Bernard, France

Background: Thoracic Abdominal Aortic Aneurysms (TAAA) and Abdominal Aortic Aneurysms (AAA) are traditionally treated surgically, but more and more by interventional procedures. A significant number of patients are treated, fenestrated, branched grafts, chimney techniques). We used a new concept of stent, the Multilayer Stent Flow Modulator (M.F.M) to treat these aneurysms (A) and try to avoid some major complications.

Methods: This selfexpandable M.F.M is a 3 D braided tube made of several inter-connected layers without any covering. We will explain and demonstrate the key principles of the stent leading to thrombosis, shrinkage of the A, eliminating the risk of rupture. Moreover, this M.F.M preserves the collateral branches allowing the possibility to cover any artery without compromising the flow (renal, digestive arteries, sexual). Results: 10 TAAA, 8 AAA (7 extended to both iliac arteries) treated with MFM in very high risk patients. 53 MFM implanted (1 to 5 per pt), o. Technical success: 100% o. At 30 days: no neurological complication, branch patency 100%, no death o. During the follow up we had 3 deaths not related to CT. Species control performed at 1, 3, 12, 18 months with calculation of A. Diameters and Volumes. o. All collateral branches remain patent and we observed a progressive thrombosis and shrinkage and the aneurysm sac depending on the size of the collaterals. Some patients developed a thrombus after 1 month, some after 6 months and some even after 18 months. A significant mean diameter reduction was observed between baseline and 6 months: 17.25 mm reduction for the transversal diameter, 13.83 mm for the antero posterior diameter in the TAAA group. Overtime the ratio thrombus volume / Total Volume is increasing and the ratio Residual Flow Volume / Total Volume is decreasing. The problems of thrombosis, shrinkage and volume reduction of the aneurysm sac will be discussed. The complications rates with M.F.M appear lower in comparison with current endovascular techniques, and with surgery.

Conclusions: The M.F.M represents an alternative to current devices to treat TAAA and AAA. It is a safe procedure with a low complication rate. The first results are promising. A larger study is ongoing.

TCT-516

Argatroban and t-PA During Catheter-Directed thrombolysis for Extensive lower Extremity Deep Venous Thrombosis

Mohsen Sharifi1, Wilbur K. Freeman2, Jean Chatham3, Taheerem Emami3, Curt Bay4, Frederic Schwartz5
1Arizona Cardiovascular Consultants & Vein Clinic, Mesa, AZ, 2Arizona Cardiovascular Consultants & T.A. Still University, Mesa, AZ, 3T.A.Still University, Mesa, AZ, 4Arizona Cardiovascular Consultants, Mesa, AZ, 5Arizona Cardiovascular Consultants, Mesa, AZ

Background: Extensive acute deep venous thrombosis (DVT) responds favorably to catheter directed thrombolysis (CDT). Argatroban is an effective parenteral direct thrombin inhibitor which makes it an attractive drug for DVT treatment. There is a paucity of data on the utilization of argatroban in combination with tPA for extensive DVT.

Methods: 35 patients with extensive DVT involving the femoropopliteal and iliac veins underwent PEVI. DVT was bilateral in 24 patients. A 6-8 F sheath was placed in each popliteal vein under ultrasound guidance. DVT had developed within 10 days of major surgery in 7 patients. For maceration of the clot balloon venoplasty was performed in all. Subsequently an infusion catheter was placed through the popliteal sheath(s) and t-PA delivered at 1mg/hr for 20-24 hours for unilateral DVT and at 0.75 mg/hr through each infusion catheter for bilateral involvement. For unilateral DVT, argatroban was given at 0.5-1 mcg/kg/min through the side port of the sheath and for bilateral DVT it was given at 0.3-0.75 mcg/kg/min. PTT was kept between 50-90 seconds. Every 3 hours the PTT was checked if there was a change in the Argatroban dose. It was checked every 12 hours if the PTT had remained within the therapeutic range. Follow-up venography was performed between 20-30 hours after PEVI.

Results: With the above regimen there were no bleeding complications even in the 7 patients with recent surgery. Complete or significant resolution of thrombus was noted in 32 patients (91%). In 3 patients who previously had occlusive thrombus within their IVC filter, the iliac and femoropopliteal DVT had resolved, however some degree of filter persisted. These were treated with further thrombectomy and the procedure terminated at that time with removal of the sheaths.

Conclusions: CDT using a combination of low dose argatroban and t-PA is highly effective and safe in the treatment of massive diffuse DVT. The unacceptable high rates of bleeding previously reported are not applicable to the contemporary era. A synergistic effect exists between argatroban and t-PA which make them an ideal anticoagulant-thrombolytic combination for CDT.

TCT-517

Reduction of Hospitalization and Duration of Anticoagulation for Deep Venous Thrombosis in Patients Undergoing Percutaneous Endovascular Intervention and Receiving Novel Anticoagulants

Mohsen Sharifi1, Wilbur K. Freeman2, Nikki Rezania3, Taheerem Emami4, Jean Chatham3, Frederic Schwartz5
1Arizona Cardiovascular Consultants & T.A. Still University, Mesa, AZ, 2T.A.Still University, Mesa, AZ, 3Arizona Cardiovascular Consultants & Vein Clinic, Mesa, AZ, 4Arizona Cardiovascular Consultants, Mesa, AZ, 5Arizona Cardiovascular Consultants, Mesa, AZ

Background: The current recommendation for the treatment of deep venous thrombosis (DVT) is at least 5 days of parenteral anticoagulation with a minimum of 24 hours of overlap with a vitamin K antagonist at a therapeutic INR. It has been well established that percutaneous endovascular intervention (PEVI) reduces the sequelae of DVT by early removal of thrombus. The efficacy and safety of novel anticoagulants rivaroxaban and dabigatran following PEVI has not been investigated.

Methods: 93 patients with femoropopliteal, iliac, upper extremity and jugular DVT who had undergone PEVI underwent initiation of dabigatran (34 patients) or rivaroxaban (59 patients) within 2 hours after their procedure. No parenteral anticoagulation was given when oral anticoagulants were started. The mean follow up was 18±3 months. Aspirin at 81mg daily was given to 18 patients who had received an endovascular stent and was continued for 1 month. The patients were evaluated for recurrent venous thromboembolic (VTE) disease and bleeding during the follow-up period.

Results: There was no bleeding or recurrent VTE in any patient. Two patients could not tolerate dabigatran due to gastrointestinal side effects. The mean duration of parenteral treatment was 31±5 hours. Enoxaparin was the parenteral anticoagulant in 17 patients and unfractionated heparin in the remainder. The mean duration of hospitalization was 29±5 hours. At follow-up 3 patients died due to cancer.

Conclusions: In patients undergoing PEVI, the duration of safe and effective parenteral anticoagulation is less than the traditionally accepted minimum of 5 days. Initiation of rivaroxaban or dabigatran soon after PEVI promotes early discharge and obviates the inconveniences associated with regulation of INR.

TCT-518

One-Year Results of the Multi-layer Flow Modulator Stent in the Management of Thoracoabdominal Aortic Aneurysms.

Sherif Sultan1, Niamh Hynes2
1Western Vascular Institute, Galway, Ireland
2University College Dublin, Ireland

Background: We present the first 55 cases of MFM implanted under indication for use to treat aortic disease. All were done on compassionate basis, in 11 countries. Primary Endpoints are Freedom from Rupture and Aneurysm-related Death.

Methods: They were 31 Crawford Thoraco-abdominal (8 Type I, 3 Type II, 9 Type III, and 11 Type IV), 7 arch, 3 abdominal, 8 suprarenal aortic aneurysms and 6 Type B dissections. Mean age of 64.5 years +/- 18 years; mean aneurysm diameter was 6.04cm+/1.66cm (Median 5.76cm). Mean number of side branches covered was 3.7 per case (median, 4 range 0-6). Total 108 stents used, mean of 1.96 MFM per case (Median 2, range 1-5).

Results: One-Year Aneurysm-related survival was 93.7% (SE+/4.4%). No rupture occurred. Technical success was 98.2%. One-year all-cause survival was 84.8% (SE+/6.25%). There was no paraplegia. No peri-operative visceral insult. At 12 months all 202 side branches were patent. No stent fractures. One-year intervention-related survival was 92.4% (SE+/3.6%). At six months mean rate of sac volume increase was 0.36% per month. At twelve months the rate of increase had slowed to 0.28% per month. The ratio of thrombus to total volume stayed almost constant over the 12 months at 0.48, while the ratio of flow to total volume fell from 0.21 to 0.12 at 12 months.

Conclusions: Increasing sac size did not herald rupture. MFM implantation instigates a process of aortic remodeling involving initial thrombus deposition, which slowed between six and twelve months. The MFM was not associated with loss of native side branches.

TCT-519

Comparison of Wound Healing in Critical Limb Ischemia according to Wound Types with and without Successful Revascularization

Norihito Kobayashi1, Toshiya Marumatsu2, Reiko Tsukahara1, Yoshibi Ito3, Hiroshi Ishimori1, Keesuke Hirano1, Masatsugu Nakano1
1Saiseikai Yokohama-city Eastern Hospital, Yokohama, Japan
2Saiseikai Yokohama-city Eastern Hospital, Yokohama, Japan
3Kanto Medical College

Background: To achieve successful revascularization is important for wound healing in critical limb ischemia (CLI) with tissue loss following endovascular therapy (EVT). However, sometimes experience failure to achieve wound healing even after successful EVT. We investigated the relationship between wound healing and successful revascularization according to wound types.

Methods: Between April 2007 and April 2012, 171 CLI patients (204 limbs) classed according to Rutherford 5 or 6 were treated by EVT in our institute. In these limbs, 19% individual wounds existed on foot and were evaluated wound healing rates and time to healing according to their wound types with and without successful revascularization. Wound types were divided into three groups, group T (Toe wound, n=128), group H